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The management of the internet connectivity in the South African public libraries

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Abstract

Free public internet access remains an anchor and critical component in the role that public libraries play, especially in South Africa. This paper reports on a study that was undertaken to determine how internet access in South African public libraries is managed. The paper was guided by research questions on the awareness of regulatory policies governing internet access in public libraries; the budget allocation to public libraries to fulfil their mandate; the level of Information and Communications Technology (ICT) support in public libraries; and internet accessibility in public libraries. The study employed a survey design in which an interview was used to collect data from nine respondents. No sampling was done on the population (nine directors of provincial public libraries), as the nature of this population did not warrant further dissection due to its size. It emerged that internet access in public libraries was provided by various internet service providers (ISPs) and that the bandwidth capacity provided to these libraries differs from province to province. Some recommendations were that telecommunication infrastructure be made available to historically disadvantaged rural public libraries, as well to enable them to access the internet, and that government should intervene to bring down the cost of bandwidth in the country to ensure the sustainability of internet access.

Keywords

Community libraries; Digital divide; Information and Communication Technology; Internet access; Internet service providers; Public libraries; South Africa.

1. Background and introduction to the study

The provision of free public internet access to citizens remains a critical component in the role of public libraries. Mugwisi, Jiyane, and Fombad (2018:31) attest that public libraries are important institutions to support access to information services. To facilitate this access, internet connectivity is crucial and serves as a key driver towards addressing the digital divide. According to the American Library Association (2009:4), public libraries or community libraries are seen by many as their first choice for internet access, mainly because they are funded and built by government. As a result, they are mandated to provide free information services to the communities they serve.

Government information, community information, employment opportunities, agricultural information, as well as educational information are among the services offered to communities by public libraries (Hart 2010; Claire 2017; Ledwaba 2018). If public libraries have internet access, communities can access services without having to travel far for this information. Inadequate infrastructure, however, hampers such initiatives. According to Bertot, Jaeger, McClure, Wright and Jensen (2009:14), the challenge of telecommunication infrastructure and funding is global, although it is more evident in under-developed countries.

In an unequal South African society, internet access in public libraries provides a means for those without access. Mojapelo (2019:4) confirms that public libraries have a pivotal role to play in providing free internet services to people, including those in the marginalised rural communities. The provision of internet access to public libraries

in South Africa is currently heavily dependent on private telecommunications companies (Ledwaba & Tsebe 2012; World Public Library 2015). At the time of review, there were 1612 provincial public libraries in South Africa spread across all the nine provinces in (Ledwaba 2013; NLSA 2015; DAC 2016), as depicted in Table 1.

Name of the province	**Number of libraries**
Eastern Cape	144
Free State	173
Gauteng	234
KwaZulu-Natal	174
Limpopo	74
Mpumalanga	111
Northern Cape	253
North West	102
Western Cape	347
Total number of libraries	**1 612**

Table 1: Breakdown of public libraries per province

The telecommunication companies, also referred to as internet service providers (ISPs), are contracted to public libraries for the provision of internet access for a limited duration. Upon expiry of the contract, a new service provider would likely come in with a new set of equipment and other requirements. This leaves some public libraries without internet access for long periods. As argued by Singh (2018), close to 125 of KwaZulu-Natal public libraries did not have internet access from March to July 2018 following a contractual dispute with Telkom (a South African telecommunication company).

2. Contextual setting

Through an enabling legislative environment, South African public libraries receive funding from the government. Owing to the three-tier government setup, the policy

directives and coordination of the public library network in South Africa is determined at national level, whereas the management of these public libraries is done at provincial or local level (Dick 2007; Hart 2010; NLSA 2015). As in other countries, less equipped public libraries in South Africa are found in rural areas. These areas are characterised by their geographic spread with low-income communities, where individuals can rarely afford the costs of ICT services (Siochrú & Girard, 2005). The common means of ICTs in these areas are cell phones; however, in certain areas there is no network signal to use cell phones. Therefore, it becomes critical to manage internet connectivity as a resource in these public libraries. Mobile libraries with internet access (wi-fi) are thus significant vehicles to deliver information services to these areas.

3. Review of related literature

Various information sources were used to anchor the study.

3.1 The state of public libraries in South Africa

The history of South Africa and South African public libraries is well documented. As the purpose of this study was not a historical investigation of public libraries in South Africa, an in-depth report on the history of South African public libraries will not be discussed. This has been covered by authors such as Taylor (1967), Lor (1998), Leach (1998), Mostert (1999), Dick (2007) and Ralebipi-Simela (2015). However, it is important to emphasise the inequalities within which public libraries in South Africa are developed in order to understand the current public library setting.

Public libraries in South Africa were developed along the racial lines, owing to the apartheid legacy. Positive socio-political change in the public library system has been evident since the mid-1990s as a result of the democratic dispensation (Stilwell 2008). It was not until the end of apartheid in 1994 that equal access to all public libraries by all populations was guaranteed by the Constitution of the Republic of South Africa. The new laws guaranteed all persons equal, non-discriminatory access to public

services. However, this impulse towards change has also been subjected to many setbacks due to the legacies of apartheid. Among these, as the Department of Arts and Culture (2014) outlines, is that the location of many public libraries has been influenced by former apartheid spatial planning with the result that many areas, such as former townships, informal settlements and rural areas, are being under-served or not served at all.

The recapitalisation programme introduced by government, as outlined in the Library and Information Services (LIS) Transformation Charter (DAC 2014), made significant strides in developing and improving public libraries in the country. Old buildings were refurbished, and new library buildings were erected (National Library of South Africa 2012).

3.2 Integration of ICTs in public libraries

According to Islam and Islam (2006:809), ICT is a comprehensive concept that runs parallel with information technology (IT), which denotes not only a single unit of technology but an assembly of technologies. The growth of ICT has opened the door for libraries to make use of technological facilities for the betterment of their services. Nwabueze and Ibeh (2013:159) purport that the advent of the internet and other ICTs led to an information explosion and placed a substantial burden on libraries as custodian of information and other knowledge-based resources. This resulted in libraries facing new challenges, new competition, new demands, new expectations and a variety of information services from users tailored to their needs.

The use of ICT for library operation saves a considerable amount of time, resources and labour. It also accelerates technical processing and information services (Gill 2001; Hussain, Khan & Zaidi 2013:2). ICT has been a means to bring quality services not only to public libraries, but also to all libraries in general. Shuva (2005:161) concurs that systematic planning of its introduction and application will ensure that technology-based information services are sustainable and enhance the ability of libraries to render services efficiently.

According to Shuva (2005:159) and Nwabueze and Ibeh (2013:27), technologies for collecting, storing, processing and communicating information are divided into two

main categories, namely those that process information, such as computer systems, and those that disseminate information, such as telecommunication systems. The term 'Information and Communication Technology (ICT)' is more commonly used to embrace these categories.

The integration of ICT in public libraries becomes imperative in this age when advances in technology have created new tools with abundant benefits, like ease of services, security of information resources, speed, cost control and space saving (Nwabueze & Ibeh 2013:28). Through the use of ICT, libraries globally are able to access and provide online databases across the country and worldwide, among other things (Saraf 1998; Shuva 2005; Bertor et al 2011; Nwabueze & Ibeh 2013). According to Osuigwe (quoted in Nwabueze & Ibeh 2013:29), such benefits necessitated a move from paper to electronic media as the prevailing form of information storage, retrieval and dissemination. Some of the advantages of ICT integration in libraries include (Cochrane in Saraf 1998:6) easy integration of various library activities, cooperation and the formation of library networks, avoidance of the duplication of efforts within a library and between libraries in a network, and increased efficiency.

Associated with the advantages are hindrances impacting on the adoption of ICTs in the public libraries. These barriers include poor ICT infrastructures, constant change of software and hardware, ICT skills and copyright and intellectual property rights management (Singh 2015). As in other countries, public libraries in South Africa are funded by government. This place them in a better position in terms of general challenges experienced by public libraries. As noted by Lediga and Fombad (2018:296) "*although research statistics show that African countries lag behind those in the rest of the world in the development of ICT infrastructure this is not the case in South Africa, as the country enjoys a high level of ICT integration and adequate ICT infrastructure*". Owing to the inequalities of the past, the provision of ICTs at public libraries in South Africa is still on a limited scale (Mamafha, Ngulube & Ndwandwe 2014; Satgoor 2015). This is evident in some rural public libraries that still struggle to integrate ICTs due to the lack or unavailability of ICT infrastructure and resources. To mitigate against this challenge, government, through the Mzansi Libraries On-line (MLO) project, is making strides in addressing the gaps. The MLO project seeks to

empower South African communities by providing free access to the internet as well as ICT equipment at public libraries (NLSA 2015).

3.3 Internet access in public libraries

Public libraries abroad have incorporated the use of the internet in their daily operations. According to Larsen (2006), the Nordic countries are highly developed and at the forefront when it comes to exploiting ICT possibilities in all spheres of society. Finneman (2007) further argues that the internet is continuing to penetrate these Nordic countries and it is now an integral part of the overall media structure. In the US, millions of Americans depend on public libraries for free access to the internet and the wealth of resources available online (American Library Association, 2009). The American Library Association indicates that by the year 2009 almost all American public libraries were offering free public access to computers and the internet. In Australia, penetration of internet services in public libraries has increased the availability of online resources to users (Berryman 2004). He further elaborates that the level of penetration varies from state to state. However, as he puts it, the most frequently available services on the internet are information related and these include government e-services, health care and income generating services.

On the African continent, the majority of public libraries are located in the urban and semi-urban areas (Mutula 2001; Nzivo 2012; Sulah 2012; Wanas 2012; Radijeng 2013). The provision of internet access in public libraries is therefore biased towards these areas as opposed to their rural counterparts. This remains a challenge although strides are made to provide access to the underserved rural public libraries. Mwesige (2008) and Sulah (2012) attest that Uganda is among the African countries that provide free internet access to the public, although this provision is at a limited scope. Conversely, Kenya was connected to the internet in 1996, leveraging on the technological

landscape taking place globally (Mutula, 2001:158). This enabled public libraries to provide access to the internet, but the internet services in these libraries are confined to branch libraries in the urban areas of Kenya (Mutula 2001; Nzivo 2012).

In connecting Egypt to the internet, together with Peru, Fiji, Indonesia, and Costa Rica in 1993, public libraries were propelled to take advantage of this technology in revampings their services (Parent & Cruickshank 2009:93). Nowadays, public libraries in Egypt provide internet access to the public free of charge, but with limitations due to the economic factors inherent in the provision of access to the internet. Radijeng (2013) alludes that the Sesigo Project, a countrywide programme, was used as a vehicle to install computers and internet for free use by the public in Botswana public libraries. Internet access is thus currently provided to public library users free of charge.

As mentioned, less equipped public libraries in South Africa are located in rural areas characterised by their geographic spread with low-income communities, where individuals can rarely afford the costs of ICT services (Siochrú & Girard, 2005). However, the South African government is providing internet access to these libraries despite their geographic location. The policy directives and coordination of the public library network in South Africa is determined at national level, but the management of these public libraries is done at local or provincial level (Dick 2007; Hart 2010; NLSA 2015). It is for this reason that the provision of internet access to public libraries is done through funding to the provinces (KPMG 2007; South African Public Library and Information Services Bill 2010). The autonomous structure of the provinces dictates how public libraries are connected to the internet. Those public libraries with internet access provide this service to its users at no charge.

4. Problem statement

Provision of internet access to public libraries is a government competency (Berryman 2004; Larsen 2006; Baltrūnas et al. 2008; Bertot et al. 2011; National Library of South Africa 2015). Yet some governments in various countries partner with industry or the private sector to provide public libraries with internet access (La Rue 2012; Radijeng 2013). In South Africa, private telecommunications companies are tasked with the responsibility of providing internet access to public libraries amid challenges associated with this service.

The internet connectivity project, Mzansi Libraries On-Line, which provides free internet access through public libraries, also rides on the back of private telecommunications companies. However, connectivity to these public libraries is managed through the parent government department. The mode of connectivity and the capacity provided to these libraries are thus dependent on the affordability or scope of the parent department. This results in public libraries using different service providers and modes or channels to connect to the internet. The allocated bandwidth capacity also differs from library to library, and this limitation poses a critical challenge to public libraries in sustaining the internet access provided to them.

Studies on public libraries and internet access have been conducted across the globe (Parent & Cruickshank 2009; Radijeng 2013; Mugwisi, Jiyane, and Fombad 2016; Mojapelo 2019). Nevertheless, these studies focused more on internet access and use in public libraries than on the management of internet access in public libraries. This paper aims at finding out how internet connectivity in South African public libraries is managed. Managing internet access in these libraries will ensure funding for internet access, compliance to regulatory policies governing internet access, standardised

monitoring and evaluation of ISP services to the public libraries, as well as equitable bandwidth distribution among the libraries.

5. Purpose and objectives of the paper

The purpose of this paper was to determine how internet connectivity in South African public libraries was managed in an attempt to provide recommendations for sustainable internet access in these libraries. The study was guided by the following research objectives:

- To establish awareness of regulatory policies governing internet access in public libraries
- To determine the budget allocated to public libraries to fulfil their mandate
- To ascertain the level of ICT support in public libraries
- To investigate the accessibility of internet in public libraries

6. Methodology

The paper adopted a qualitative research approach. Nine heads of directorates of library services in the nine provincial departments of arts, sport, culture and recreation in South Africa formed the research population for the study.

These participants were selected since they are responsible for the public libraries and are involved in their management. The study employed a survey design in which interviews were used to collect data from the participants. Scheduled and structured telephonic interviews comprising a set of questions with fixed wording and sequence of presentation were conducted.

The purposive sampling technique was used to choose all nine provincial heads of the directorates of library services in South Africa. There was no need to dissect this population because the number was too small to warrant further sampling. The

provincial heads were included in the study as they were directly involved in the management of internet access in their respective public libraries.

7. Findings and discussion

Of the nine heads of provincial directorates of library services, six participated in the interviews and three were unavailable.

7.1 Awareness of regulatory policies on internet access in public libraries

The study found that awareness of regulations and policies governing internet access was poor. Only one respondent was aware of regulations applicable to internet access in public libraries, which was of concern. The one respondent mentioned the Films and Publications Act, No. 65 of 1996, Promotion of Access to Information Act, No. 2 of 2000, Copyright Act, No. 98 of 1978, while others cited their provincial internet usage policies as regulations applicable to internet access. These responses indicated a lack of awareness of regulations pertaining to internet access. It is thus implied from the examples provided that internet access in their public libraries was regulated by individual provincial internet access policies. Apart from regulations at a national level, such as the Electronic Communications Act, No. 36 of 2005 (ECA), ICASA Act, No. 13 of 2000, Electronic Communications and Transactions Act, No. 25 of 2002, and the National Broadband Policy National Radio Frequency Spectrum Policy, other policy directives such as provincial ordinances regulating internet access were managed at a provincial or local level (Krolak 2005; Dick 2007; Hart 2010; NLSA 2015). Generally, a lack of awareness of regulations and policies implies that the respondents would probably not know the importance of such legislation.

Furthermore, the study established that five respondents who indicated the effectiveness of regulations or policies in coordinating the provision of internet access to public libraries were actually referring to the provincial policies regulating internet access rather than national legislation on internet access. It can be deduced from these responses that what was considered effective were actually the provincial internet fair use policies drafted by their provincial Information Technology departments rather than national legislation on internet access. This is mainly due to

the fact that what respondents provided as regulations governing internet access in public libraries have little to do with internet access regulation.

7.2 Budget allocation for a period of five years (2013 – 2017)

The respondents were asked to indicate the total budget allocated to their public libraries between 2013 and 2017 and it was established that the ICT budget is managed centrally within a province. Figure 1 is a presentation of the cumulative budget for a period of five years for all nine provinces.

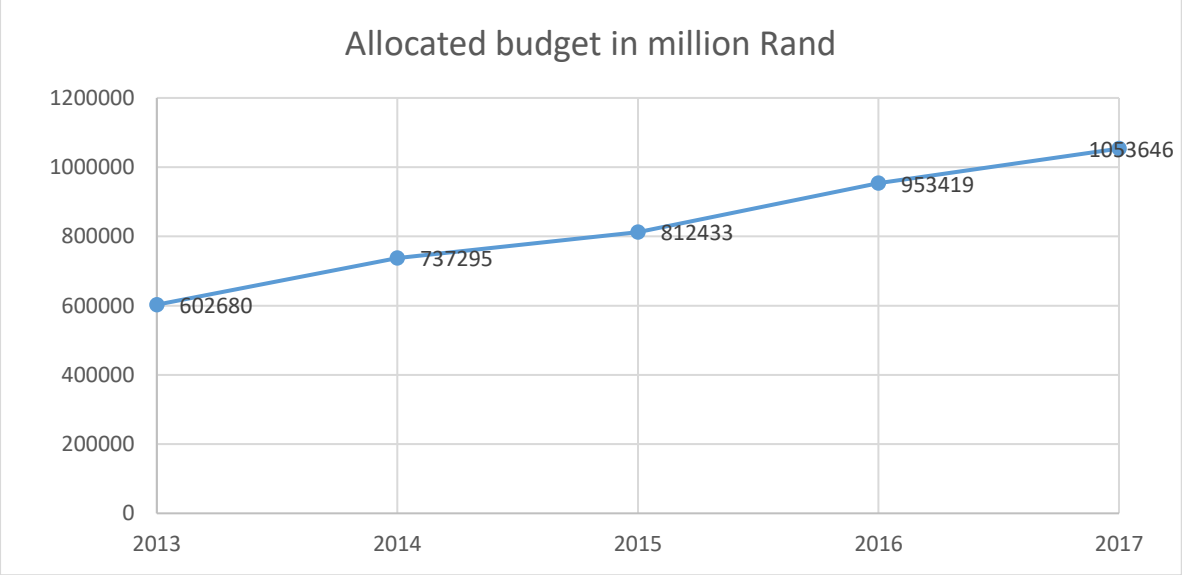

Figure 1: Total allocated budget for public libraries in all nine provinces from 2013 to 2017

It is evident in Figure 1 that the budget allocations for public libraries nationally have been steadily growing. A key factor contributing to this growth was the allocations made to public libraries through the Conditional Grant Programme. Respondents also indicated that since the introduction of the Conditional Grant Programme, provinces used this grant to replace equitable share allocation, which is the normal budget allocation made by the provincial government to public libraries. Nonetheless, the budget allocation has been increasing despite budget cuts in other sectors (DAC 2016). As alluded by Levien (2011), governments at every level face the need to cut back services as a result of declining revenue and other budgetary pressures. While the argument put forward by Levien remains relevant to this day, additional allocations such as ring-fenced budgets and donor funds boost the libraries' budgets.

In this case, the conditional grant for public libraries contributed immensely to the growth of public libraries' budgets.

When asked how much of the libraries' budget is allocated to the provision of ICTs, 33% of respondents indicated that ICTs are allocated 5% of the total library budget. This allocation, according to them, had to cater for all ICTs, including hardware, software and internet provision. The majority of respondents (67%) indicated that the ICT budget for the entire provincial department was managed by the provincial central ICT department. As a result, they did not know how much of the budget was allocated to ICTs in their public libraries. In terms of the budget allocated specifically for internet provision, respondents also mentioned that it was centrally controlled by the provincial ICT department and they did not know the amount or percentage allocated for internet provision.

7.3 ICT support staff in public libraries

It was encouraging to note that most public libraries (80%) had staff dedicated to assist users with ICT needs. In KwaZulu-Natal, for example, these personnel were commonly referred to as 'cyber cadets'. The skills levels of dedicated ICT personnel ranged from basic computer literacy to an ICT qualification. ICT assistance to patrons has been increasingly on demand due to the introduction of ICT services in public libraries where the services have been overwhelmingly embraced by patrons. Lack of the required ICT skills among the librarians led to these skills being scouted elsewhere. Financial constraints, however, have been a limiting factor in employing skilled ICT personnel in each public library. Based on these limitations, it became critical for librarians to also be skilled in basic ICT competencies to better serve their patrons.

Respondents who did not have dedicated personnel in their public libraries were further probed on how they dealt with their patrons' ICT needs. They mentioned that ICT services were provided by the municipal ICT assistants who were placed at municipal ICT departments. These were some of the responses:

"We, as staff, try to assist as far as possible or call the Provincial IT specialist for telephonic assistance. Sometimes he also comes out to us to assist"

"If I have a problem with a computer or Internet I call the Head Office and they will take their time to come to the library with their ICT specialists"

"We are dealing with it by reporting to IT department and they will send the official to assist we do not have person for only libraries"

It was mentioned that an average of two dedicated ICT personnel was placed per library, depending on the size of the library.

7.4 Access to internet

It was established that most public libraries (97%) have internet access. However, the few libraries (3%) that did not have access to the internet were those located in the rural areas. These were specifically modular or container libraries. These libraries were not connected to the internet due to a lack of electricity. This observation concurs with the KPMG report (2007), Nzivo (2012) and Mojapelo (2019) who affirmed that internet services were confined to libraries primarily situated in the urban areas. The findings established that most public libraries (80%), especially those in urban areas, were connected to the internet through the normal data line (ADSL). This again confirms that the ICT infrastructure in urban centres is well established as opposed to their rural counterparts. Alternatively, public libraries that were connected to the internet through satellite means were mostly found in the far-flung rural areas. These areas included Ga Phaahla, Shongwane in the Limpopo Province, Bankhara, Betty Peters Library in the Northern Cape Province, Madibogopan, Kgakala and Blyvooruitsig Library in the North West Province.

Despite the higher cost in terms of coverage, satellite connectivity was available virtually everywhere. Satellite was a great choice for rural internet access, since many other internet services did not cover these areas (Kinney 2010:107). Unlike satellite connectivity, cable or fixed lines (ADSL) were available in areas where cables were installed. However, Claire (2017:16) indicated that although cable internet was available in most urban and surrounding areas, its coverage did not extend to many rural areas. Equally, to get reliable cable internet, one needed to live relatively close to one's service provider and this further limit one's access to the internet (HughesNet

2017). It was also established that each province had its own contracted ISP with service level in place and some provinces, such as Gauteng, Mpumalanga and the Western Cape, had multiple ISPs. All respondents indicated that their ISPs were appointed for a period of three years. They further mentioned that, initially, they appointed ISPs for a duration of two years but they realised that "*two years elapse without having all listed libraries connected to the internet*" and that "*two years is insufficient for them (ISPs) to break even due to the high costs they incur*". It is worth mentioning that it was a legal requirement to re-advertise the work upon expiry as mandated by the Public Finance Management Act (PFMA, No. 1 of 1999); re-advertising was in compliance with this act.

8. Conclusion

The majority of South African public libraries are connected to the internet through different modes of connectivity. Lack of network infrastructure and the expensive connectivity to the internet are an impediment towards rolling out and sustaining internet connectivity in the rest of the country's public libraries. Based on the research focus articulated in the study, it is concluded that ways of providing internet access to public libraries in South Africa need to be reviewed to ensure proper management. To achieve this, the weaknesses identified in this study need to be addressed to pave the way for a sustainable solution to public library internet management.

9. Recommendations

The study makes the following recommendations:

Awareness of regulatory policies on internet access in public libraries

Awareness campaigns should be conducted through advocacy and lobbying to acquaint public librarians with regulations and policies in the LIS sector. Apart from advocacy and lobbying, conducting policy awareness workshops and roadshows organised by the national Department of Sports, Arts and Culture and through the library association (LIASA) can improve the situation.

Budget allocation for internet access

Funding for all public libraries' internet access should be managed centrally at a national level. This will ensure equitable distribution of resources towards internet infrastructure across all public libraries. The costs of infrastructure, bandwidth, maintenance and support should be included in the funding.

ICT support staff in public libraries

Librarians should be re-skilled in basic ICT troubleshooting to equip them to deal with the ever-changing technological landscape and changing needs of their users. Conversely, para-professionals should also continuously be trained to equally equip them. Training can be organised through their provincial departments and the LIASA's Public and community Libraries Interest Group (PACLIG).

Access to internet

An audit of ICTs in the public libraries should be conducted and identified gaps be filled. While satellite connectivity has been mainly used in the remote rural public libraries of the country, rolling out fiber or fixed lines to both rural and urban public libraries should be considered. This should be commissioned in partnership with telecommunications companies in South Africa. Telecommunication companies should be encouraged and incentivised to invest in the project. Engaging multiple companies in this drive will be more effective than placing a burden on a single entity.

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